

Program Change Request

Date Submitted: 01/22/26 11:16 am

Viewing: **CYBER-EM2 : Cybersecurity BS, Information Systems and Technology Emphasis**

Last approved: 01/26/22 4:05 pm

Last edit: 01/29/26 11:40 am

Changes proposed by: Shaji Khan (khanshaj)

Catalog Pages Using this Program

[Cybersecurity BS, Information Systems Emphasis](#)

Initiator: Name: [Shaji Khan Elizabeth Sampson](#) Phone: [314-516-6279 X6810](#)

Email: shajikhan@umsl.edu
sampson@umsl.edu

Program Code CYBER-EM2

In Workflow

1. S005150 Chair
2. Curricular Alignment Check
3. Academic Affairs Program Preapproval
4. SBUSN Undergraduate Assoc Dean
5. SBUSN Dean
6. Senate C&I
7. Senate C&I Editing
8. FacultySenate
9. Academic Affairs
10. Registrar Programs

Approval Path

1. 01/23/26 11:44 am
Dinesh Mirchandani (mirchandani):
Approved for S005150 Chair
2. 01/26/26 1:58 pm
Keeta Holmes (holmeskm):
Approved for Curricular Alignment Check
3. 01/29/26 11:38 am
Betsy Sampson (sampson):
Approved for Academic Affairs Program Preapproval

4. 01/30/26 10:08 am
Shaji Khan
(shajikhan):
Approved for SBUSN
Undergraduate
Assoc Dean
5. 01/30/26 5:07 pm
Shu Schiller (ssg8f):
Approved for SBUSN
Dean
6. 02/10/26 8:50 am
Ho Kim (kimho):
Approved for
Senate C&I
7. 02/10/26 9:49 am
Betsy Sampson
(sampsone):
Approved for
Senate C&I Editing

History

1. Jan 27, 2021 by
Betsy Sampson
(sampsone)
2. Jan 26, 2022 by
Dinesh Mirchandani
(mirchandani)

To be completed by Academic Affairs

Title	Cybersecurity BS, Information Systems and Technology Emphasis
Program Type	Emphasis Area
College/School	Ed G. Smith College of Business
Department	Information Systems
Academic Level	Undergraduate
CIP Code	11.1003 - 11.1003
Effective CAT	<u>2025-26</u> 2021-22

Program Requirements and Description as it will appear in the bulletin.

Emphasis Area Requirements

In addition to the 24 credit hours of core required coursework, the B.S. Cybersecurity degree with Information Systems and Technology emphasis requires ~~81 credit hours of~~ emphasis specific coursework listed below. ~~(45 general business + 36 program specific)~~. Thus, candidates for the B.S. in Cybersecurity degree with Information Systems and Technology emphasis must complete a program of 105 ~~(24 core + 81 emphasis specific)~~ credit hours of required courses:

~~For the Information Systems and Technology emphasis all general degree requirements from the College of Business Administration apply.~~

<u>INFSYS 3806</u>	Managerial Applications of Object-Oriented Programming I	3
<u>INFSYS 3820</u>	Introduction to Systems Administration	3
<u>INFSYS 3830</u>	Data Programming	3
<u>INFSYS 3842</u>	Data Networks and Security	3
<u>INFSYS 3845</u>	Database Management Systems	3
<u>INFSYS 3858</u>	Advanced Security and Information Systems	3
<u>INFSYS 3862</u>	Artificial Intelligence Applications for Business	3
<u>INFSYS 3864</u>	Applied Cryptography for Business	3
<u>INFSYS 3866</u>	Cloud Security for Business	3
<u>INFSYS 3886</u>	<u>Information Systems Risk and Compliance Auditing</u>	<u>3</u>
Electives		6
Any 3000-level or above courses from INFSYS, CMP SCI or other business subjects approved by the program coordinator.		
INFSYS 3807	Legacy Systems	
INFSYS 3815	Object-Oriented Applications in Business	
INFSYS 3816	Managerial Application of Object-Oriented Programming II	
INFSYS 3817	Advanced Legacy Systems	
INFSYS 3818	Management of Software Testing	
INFSYS 3818	Management of Software Testing	
INFSYS 3841	Enterprise Information Systems	
INFSYS 3844	Developing Business Applications in .NET	
INFSYS 3847	Web Design	

INFSYS-3860	Data Integration
INFSYS-3890	Internship in Information Systems
INFSYS-3898	Seminar in Information Systems ¹
INFSYS-3899	Independent Study in Information Systems
INFSYS-4847	IT Project Management
or SCMA-4347	Introduction to Project Management
CMP-SCI-2261	Object-Oriented Programming
CMP-SCI-4700	Computer Forensics
CMP-SCI-4732	Introduction to Cryptography for Computer Security
CMP-SCI-4750	Introduction to Cloud Computing
CMP-SCI-4782	Information Security
MATH-3000	Discrete Structures
SCMA-3345	Predictive Analytics and Data Mining
SCMA-4350	Prescriptive Analytics and Optimization
SCMA-3376	Transportation Security and Risk

Other electives upon approval of Information Systems and Technology department chair

Total Hours

36

See Ed G. Smith College of Business Advising Office for a list of recommended electives.

¹If course is offered and topic is approved by the Information Systems and Technology department chair

If other departments are affected by this proposal, please secure "sign-offs" and indicate for each department the following:

Department	Contact Person	Phone #	Objections
<u>Computer Science</u> Cezary Janikow	<u>Cezary Janikow</u> 516-6352	<u>314-516-6352</u> No	<u>No</u>

Program Learning

Outcomes

Learning Outcomes

Analyze a complex cybersecurity problem and apply principles of cybersecurity and business decision making to identify potential solutions.

Learning Outcomes

Design, implement, and evaluate a cybersecurity-based solution to meet a given set of cybersecurity and business requirements.

Communicate cybersecurity issues effectively in a variety of professional contexts.

Recognize professional responsibilities and make informed judgments in cybersecurity practice based on legal and ethical principles.

Apply security principles and practices to maintain business operations in the presence of risks and threats

Function effectively as a member of a team engaged in activities appropriate to the cybersecurity discipline.

Attachments

[BS Cybersecurity - IST Emphasis Changes for FS 26.docx](#)

This program will be developed with the intention of delivery in the following delivery modes (choose all that apply)

Face to face

[Hybrid \(27%-49% of program coursework offered online\)](#)

[UMSL Online \(50-74% of program coursework offered online\)](#)

[Missouri Online \(75% or more of program coursework offered online and participates in Missouri Online\)](#)

Justification for request:

The proposed changes are to better align the program with the National Centers of Academic Excellence – Cyber Defense (NCAE-CD) Knowledge Unit (KUs) and Cybersecurity Program Learning Outcomes (PLOs). The current requirements have students completing the entire Bachelor of Science in Business Administration (BSBA) degree requirements in addition to the Cybersecurity requirements. These courses do not contribute to the NCAE-CD KUs nor the PLOs for the Cybersecurity program. This change also reduces total degree length as Fall 2024-Spring 2025 graduates averaged 154 credit hours earned upon degree completion, well above the 120 credit hours for a bachelor's degree. Please see attached document for additional and more detailed information.

Program Reviewer

Comments

Betsy Sampson (sampsone) (01/29/26 11:40 am): For HLC reporting purposes, this is a 22% change in the program.

